Request for Quotation (RFQ) for the Ytterbium Fibre Laser System to the CSIR.

RFQ No. 9396/14/11/2022

Date of issue:	Monday, 31 October 2022
Closing Date and Time:	Monday, 14 November 2022 at 16h30
Tender submission:	For submission of quotations or enquiries: tender@csir.co.za Mail size is 25MB, send multiple emails when exceeded **(Please use RFQ Number at subject reference**)

1 INVITATION FOR QUOTATION

Quotations are hereby invited for the supply of Ytterbium Laser System to the CSIR.

2 QUOTATION REQUIREMENTS

Specifications	Quantity
Ytterbium Laser System Model YLS-6000-S2T	**1 off**
Operation mode	CW / Modulated
Polarisation	Random
Nominal Output Power	6 000 W
Output power tuning range	10 % - 105 %
Emission Wavelength	1068 nm – 1080 nm
Emission Linewidth	3 nm – 6 nm
Switch on time	50 µs – 100 µs
Output Power Modulation rate	Max 5 kHz
Output Power Instability	± 2% at 6 000 W over a 1-hour period
Red guide laser power output	0.4 mW to 0.5 mW
Optical Output	
Internal 2-way beam switch	Installed
Process fiber connector	HLC-8, QBH Compatible LCA, QD-compatible
Beam Parameter Product with process fibre with core 100 µm	3.5 – 4.0 mm*mrad

Beam Parameter Product with process fibre with core 150 µm	5.0 – 6.0 mm*mrad
Beam Parameter Product with process fibre with core 200 µm	6.5 – 8.0 mm*mrad
Beam Parameter Product with process fibre with core 300 µm	10.5 – 12.0 mm*mrad
Beam Parameter Product with process fibre with core 400 µm	13.0 – 16.0 mm*mrad
Beam Parameter Product with process fibre with core 600 µm	22.0 – 25.0 mm*mrad
Beam Parameter Product with process fibre with core 800 µm	30.0 – 35.0 mm*mrad
Beam Parameter Product with process fibre with core 1 000 µm	38.0 – 45.0 mm*mrad
Process fibre length	10 m Min – 50 m Max
Process fiber bending radius	Unstressed – 100 mm Stressed – 200 mm
General Characteristics	
Operating Ambient Temperature	5 ºC to 45 ºC
Humidity, Ambient Temperature Range <40ºC	10 % - 95 %
Storage Temperature without water	-40 ºC to +75 ºC
Dimensions (w/o interface plugs, w/o castors)	W 1004 mm X D 815 mm X H 806 mm
Weight	360 kg
Cooling requirements	
Method	Tap and slightly DI-water
Cooling water temperature for Laser	20 ºC to 22 ºC
Cooling water temperature for Optics	27 ºC to 33 ºC
Laser “Cold Start” Temperature	20 ºC
Optics cooling water conductivity	30 µS/cm – 50 µS/cm
Water Pressure	2.5 bar to 3.5 bar
Water flow for laser cooling	Min 32 l/min, typical 47 l/min
Water flow for Fibre connector cooling	1.1 l/min – 2.5 l/min
Chiller cooling capacity	11.5 kW
Electrical characteristics	
Operating voltage, 3 phase	400 – 460 V / 3P + PE@50-60 Hz
Laser power consumption at 6 000 W	15 kW Min, Typically 17.5 kW
Laser operation current at 6 000 W at 400 VAC	27 A
Input fuses, 400 VAC	32 A
Process Fibre	
Optical Processing Fibre PF HLC-200-10-PP 200µm	**1 off**
Connector Type	HLC-8 (QBH-compatible),LCA (QD-compatible)
Safety system resistance	1 400 – 2 000 ohm
Water hose inner/outer diameter	4 / 6 mm
Connector cooling water flow rate (DI water)	0.5 l/min – 1.0 l/min
Recommended electrical conductivity of DI water	35 µS/cm – 45 µS/cm
Water pressure inside the connector cooling system	4.5 bar

Operating temperature	+ 10 ºC to + 50 ºC
Storage temperature	0 ºC to + 70 ºC
Protective cable outside diameter	12.7 mm – 13.3 mm
Protective cable length (L)	10 m
Bending radius (static)	80 mm
Bending radius (dynamic)	120 mm
Tensile force (over the whole cable length), at L<30m	Max 100 N
Tensile force (over the last 2 meters)	Max 150 N
Torsion per meter	Max 45º
Optical specification	
Operation wavelength	1060 nm to 1080 nm
Insertion loss	Max 3 %
Fiber core diameter	200 µm
Fiber core diameter tolerance	± 1.5%
BPP (Core ∅200µm) with Feeding Fiber: core 50 µm, BPP max 2,5 mm*mrad, Process Fiber protective cable length ≤50 meters	Max 8 mm*mrad
Beam Offset of input/output connector	10 µm
Z-position tolerance of input/output connector	± 100 µm
Beam Misalignment of output connector	Max 20 mrad
Numerical Aperture of fiber core ($NA_{fiber\ core}$)	0.14 to 0.16
Quartz block specification	
Quartz block diameter	8 mm
AR coating reflection	0.1 % at 1070 nm
Output Surface Accuracy	λ/10 at 632.8 nm
Output Surface Quality (center area with diameter 5mm) [1)]	10-5 S-D (MIL-O-13830 spec)
Laser Chiller LC 170.01-A.3.5/6 @ 460 V / 3P / 60 Hz	**1 off**
General data	
Standard	CE / VW
Cooling capacity	17,7 kW
Refrigerant	R407C
Installation	Roofed outdoor operation
Number of compressors	1
Number of pumps	2
Design point:	
Air inlet temperature	40°C
Air flow	6000 m³/h
Operation limits	
Maximum air inlet temperature	40°C
Minimum air inlet temperature	10°C Minimum air inlet temperature with 30% glycol
Maximum air inlet temperature	40°C

Minimum air inlet temperature	10°C Minimum air inlet temperature with 30% glycol
Maximum air inlet temperature	40°C
Electrical power consumption	
Electric power consumption design point	8,9 kW (without tank heater)
Maximum electric power consumption	15,2 kW
Connection voltage	460 V / 3 Ph / PE
Frequency	60 Hz
Voltage tolerance	± 10 %
Control	
Controller Typ	IG Chiller Serie
Manufacturer	IPG Laser GmbH
Dimensions	
Length	630 mm
Width	815 mm
High	1660 mm
Water connection laser circuit:	Quick coupling 1 inch
Water connection optic circuit	Quick coupling ½ inch
Cooling water circuit laser	
Cooling capacity:	17,2 kW
Cooling water outlet temperature	21°C
Cooling water return temperature	28,6°C
Accuracy of water outlet temperature	± 1 K
Water flow vs. water pressure	30 l/min at 2 bar
Cooling water circuit optics	
Cooling capacity	0,5 kW
Water quality	DI-Water 39 to 41 µS/cm
Cooling water outlet temperature	25°C
Cooling water inlet temperature	30°C
Accuracy of water outlet temperature	± 1 K
Water flow vs. water pressure	20 l/min at 3 bar
Weight	
Without water filling	400 kg

3 Additional requirements

- Clearly indicate VAT charged where applicable (if not VAT registered, please state so clearly
- Warranties and guarantees.
- Provide valid original or certified copy of the B-BBEE certificate issued by an accredited verification agency and bearing a SANAS logo, or Valid sworn affidavits

made on DTIC designed templates, or DTIC issued sworn affidavits or CIPC issued B-BBEE certificate

4 Elimination criteria

4.1 Bidders that submit late bids will not be considered.
4.2 Bidders that submit to the incorrect location or email address will be eliminated.
4.3 Bidders that are listed on the NT database of restricted suppliers will not be considered.
4.4 Bidders that are registered on the NT Register of Tender Defaulters will not be considered.
4.5 Bidders that do not submit a fully completed and signed SBD 1 and SBD 4 Form will not be considered.
4.6 Bidders must add equipment brochures to the bid. (quotations without brochures will not be considered and eliminated.)
4.7 Bidders need to be in the position to provide technical and maintenance support for the equipment. If the bidder is not the Original Equipment Manufacturer, the bidder needs to include documentary evidence with the bid to confirm that the bidder is an appointed service and maintenance agent for the equipment supplied. Failing to provide this with the bid will eliminate the bidder.

5 EVALUATION CRITERIA

5.1 Selection of suppliers will be based on the 80/20 preference point system.

5.2 Provide valid original or certified copy of the B-BBEE certificate issued by an accredited verification agency and bearing a SANAS logo, or Valid sworn affidavits made on DTIC designed templates, or DTIC issued sworn affidavits or CIPC issued B-BBEE certificate

5.3 Indicate CSD number (National Treasury Central Supplier Database) on quotation. If not registered yet on CSD, use www.csd.gov.za to register.

5.4 No order will be issued or no contract will be signed without a valid CSD number.

6 PRICING QUOTATION

6.1 Price needs to be provided in South African Rand (excl. VAT), with details on price elements that are subject to escalation and exchange rate fluctuations clearly indicated.
6.2 Price should include additional cost elements such as freight, insurance until acceptance, duty where applicable, etc.
6.3 Payment will be according to the CSIR Payment Terms and Conditions.

7 OTHER TERMS AND CONDITIONS

7.1 The supplier shall under no circumstances offer, promise or make any gift, payment, loan, reward, inducement, benefit or other advantage, which may be construed as being made to solicit any favour, to any CSIR employee or its representatives. Such an act shall constitute a material breach of the Agreement and the CSIR shall be entitled to terminate the Agreement forthwith, without prejudice to any of its rights.

7.2 A validity period of 90 days will apply to all quotations except where indicated differently on the quote.

8 APPOINTMENT OF SERVICE PROVIDER

8.1 The contract will be awarded to the tenderer who scores the highest total number of points during the evaluation process, except where the law permits otherwise.

8.2 Appointment as a successful service provider shall be subject to the parties agreeing to mutually acceptable contractual terms and conditions. In the event of the parties failing to reach such agreement CSIR reserves the right to appoint an alternative supplier.

8.3 Awarding of contracts will be announced on the National Treasury website and no regret letters will be sent to unsuccessful bidders.

9 ADDITIONAL TERMS AND CONDITIONS

9.1 A tenderer shall not assume that information and/or documents supplied to CSIR, at any time prior to this request, are still available to CSIR, and shall consequently not make any reference to such information document in its response to this request.

9.2 Copies of any affiliations, memberships and/or accreditations that support your submission must be included in the tender.

9.3 In case of proposal from a joint venture, the following must be submitted together with the proposal:

- Joint venture Agreement including split of work signed by both parties;
- The original or certified copy of the B-BBEE certificate of the joint venture;
- The Tax Clearance Certificate of each joint venture member;

- Proof of ownership/shareholder certificates/copies; and
- Company registration certificates.

9.4 An omission to disclose material information, a factual inaccuracy, and/or a misrepresentation of fact may result in the disqualification of a tender, or cancellation of any subsequent contract.

9.5 Failure to comply with any of the terms and conditions as set out in this document will invalidate the Proposal.

10 CSIR RESERVES THE RIGHT TO

10.1 Extend the closing date;

10.2 Verify any information contained in a proposal;

10.3 Request documentary proof regarding any tendering issue;

10.4 Give preference to locally manufactured goods;

10.5 Appoint one or more service providers, separately or jointly (whether or not they submitted a joint proposal);

10.6 Award this RFQ as a whole or in part;

10.7 Cancel or withdraw this RFQ as a whole or in part.

11 DISCLAIMER

This RFQ is a request for quotation only and not an offer document. Answers to this RFQ must not be construed as acceptance of an offer or imply the existence of a contract between the parties. By submission of its proposal, tenderers shall be deemed to have satisfied themselves with and to have accepted all Terms & Conditions of this RFQ. The CSIR makes no representation, warranty, assurance, guarantee or endorsements to tenderer concerning the RFQ, whether with regard to its accuracy, completeness or otherwise and the CSIR shall have no liability towards the tenderer or any other party in connection therewith

12 No goods and/or services should be delivered to the CSIR without an official CSIR Purchase order. CSIR purchase order number must be quoted on the invoice. Invoices without CSIR purchase order numbers will be returned to supplier.

13 Note: This is not a Purchase Order.

DECLARATION BY TENDERER
Only tenderers who completed the declaration below will be considered for evaluation.

RFQ No: 9396-14/11/2022

I hereby undertake to render services described in the attached tendering documents to CSIR in accordance with the requirements and task directives / quotation specifications stipulated in RFQ No-9396-14-11-2022 at the price/s quoted. My offer/s remains binding upon me and open for acceptance by the CSIR during the validity period indicated and calculated from the closing date of the quotation.

I confirm that I am satisfied with regards to the correctness and validity of my quotation; that the price(s) and rate(s) quoted cover all the services specified in the quotation documents; that the price(s) and rate(s) cover all my obligations and I accept that any mistakes regarding price(s) and rate(s) and calculations will be at my own risk.

I accept full responsibility for the proper execution and fulfilment of all obligations and conditions devolving on me under this quotation as the principal liable for the due fulfilment of this quotation.

I declare that I have no participation in any collusive practices with any tenderer or any other person regarding this or any other quotation.

I accept that the CSIR may take appropriate actions, deemed necessary, should there be a conflict of interest or if this declaration proves to be false.

I confirm that I am duly authorised to sign this quotation.

NAME (PRINT) ……

CAPACITY ……..

SIGNATURE …….

NAME OF FIRM ……..…..

DATE ……..

WITNESSES

1 ……

2 ……

DATE: ……..